

## 4-Hydroxyisoleucine

## Chemical Properties

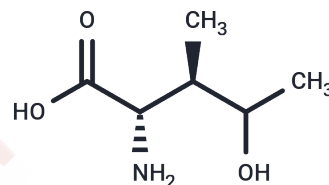
CAS No. : 781658-23-9

Formula: C<sub>6</sub>H<sub>13</sub>NO<sub>3</sub>

Molecular Weight: 147.17

Storage: Pure form: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	4-Hydroxyisoleucine (4-Hydroxy-L-isoleucine) has antidepressant-like, antidyslipidemic, and antihyperglycemic effects. It displays an insulinotropic activity.
Targets(IC50)	Others
In vitro	4-Hydroxyisoleucine (4-OHile), a peculiar nonprotein amino acid isolated from fenugreek ( <i>Trigonella foenum-graecum</i> ) seeds, exhibits interesting effects on IR related to obesity. 4-OHile increases glucose-induced insulin release, and the insulin response mediated by 4-OHile depends on glucose concentration. The beneficial effects observed are related to the regulation of blood glucose, plasma triglycerides, total cholesterol, free fatty acid levels, and the improvement of liver function. The mechanism of action is related to increased Akt phosphorylation and reduced activation of Jun N-terminal kinase (JNK)1/2, extracellular signal-regulated kinase (ERK)1/2, p38 mitogen-activated protein kinase (MAPK), and nuclear factor (NF)-κB[1]. 4-Hydroxyisoleucine attenuates the inflammation-mediated insulin resistance by the activation of AMPK and suppression of SOCS-3 coimmunoprecipitation with both the IR-β subunit as well as IRS-1[2].

## Solubility Information

Solubility	DMSO: Insoluble, H <sub>2</sub> O: 10 mM, Sonication is recommended. ( < 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	6.7949 mL	33.9743 mL	67.9486 mL
5 mM	1.359 mL	6.7949 mL	13.5897 mL
10 mM	0.6795 mL	3.3974 mL	6.7949 mL
50 mM	0.1359 mL	0.6795 mL	1.359 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Anaguiven A S , Ricardo C C , Jorge R , et al. 4-Hydroxyisoleucine from Fenugreek (*Trigonella foenum-graecum*): Effects on Insulin Resistance Associated with Obesity[J]. *Molecules*, 2016, 21(11):1596-.

Gautam S , Ishrat N , Yadav P , et al. 4-Hydroxyisoleucine attenuates the inflammation-mediated insulin resistance by the activation of AMPK and suppression of SOCS-3 coimmunoprecipitation with both the IR- $\beta$  subunit as well as IRS-1[J]. *Molecular and Cellular Biochemistry*, 2016, 414(1-2):95-104.

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